

موتور

rotation control means for controlling a quantity of the working oil supplied from the working oil supplying means to the drive rotary member so that the drive rotary member is driven and rotated as desired, the rotation control means including:

operation position inputting means for inputting an operation position;

operation-position signal outputting means for generating and outputting an operation position signal depending on the operation position input by the operation position inputting means;

drive signal outputting means for computing and converting the operation position signal output from the operation-position signal outputting means into a drive signal output therefrom;

an electric motor driven and rotated at a speed and a quantity of rotation depending on the drive signal output from the drive signal outputting means; and

working oil control means for controlling a quantity of the working oil supplied from the working oil supplying means to the drive rotary member so that the drive rotary member is driven and rotated depending on rotation of the electric motor;

drive oil pressure detecting means for detecting a pressure of the working oil for driving and rotating the drive rotary member, and generating and outputting a drive oil pressure signal depending on the pressure thus detected;

supplying oil pressure detect means for detecting a pressure of the working oil supplied from the working oil supplying means to the working oil control means, and generating and outputting a supplying-oil pressure signal depending on the pressure thus detected;

a main relief valve for regulating a pressure of the working oil supplied from the working oil supplying means to the working oil control means to be equal to or lower than a set pressure;

an electromagnetic relief valve for varying the set pressure of the main relief valve by varying a set pressure thereof; and

oil pressure control means for receiving the supplying-oil pressure signal output from the supplying oil detect means and the drive oil pressure signal output from the drive oil pressure detecting means, and outputting a current to the electromagnetic relief valve to vary the set pressure of the electromagnetic relief valve and thus the set pressure of the main relief valve,

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thereby controlling the pressure of the working oil supplied from the working oil supplying means to be higher, by a predetermined pressure, than the pressure of the working oil for driving and rotating the drive rotary member.

2. (Amended) A hydraulic drive apparatus for driving and rotating a drive rotary member in accordance with an operation position input from operation position inputting means, the apparatus comprising:

the drive rotary member driven and rotated by hydraulic pressure;

working oil supplying means for supplying working oil to drive and rotate the drive rotary member;

rotation control means for controlling a quantity of the working oil supplied from the working oil supplying means to the drive rotary member so that the drive rotary member is driven and rotated as desired, the rotation control means including:

operation position inputting means for inputting an operation position;

operation-position signal outputting means for generating and outputting an operation position signal depending on the operation position input by the operation position inputting means;

drive signal outputting means for computing and converting the operation position signal output from the operation-position signal outputting means into a drive signal output therefrom;

an electric motor driven and rotated at a speed and a quantity of rotation depending on the drive signal output from the drive signal outputting means; and

working oil control means for controlling a quantity of the working oil supplied from the working oil supplying means to the drive rotary member so that the drive rotary member is driven and rotated depending on rotation of the electric motor;

drive oil pressure detecting means for detecting a pressure of the working oil for driving and rotating the drive rotary member, and generating and outputting a drive oil pressure signal depending on the pressure thus detected;

supplying oil pressure detect means for detecting a pressure of the working oil supplied from the working oil supplying means to the working oil control means, and generating and outputting a supplying-oil pressure signal depending on the pressure thus detected;

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a main relief valve for regulating a pressure of the working oil supplied from the working oil supplying means to the working oil control means to be equal to or lower than a set pressure;

an electromagnetic relief valve for varying the set pressure of the main relief valve by varying a set pressure thereof;

oil pressure control means for receiving the supplying-oil pressure signal output from the supplying oil detect means and the drive oil pressure signal output from the drive oil pressure detecting means, and outputting a current to the electromagnetic relief valve to vary the set pressure of the electromagnetic relief valve and thus the set pressure of the main relief valve, thereby controlling the pressure of the working oil supplied from the working oil supplying means to be higher, by a predetermined pressure, than the pressure of the working oil for driving and rotating the drive rotary member;

supplying oil quantity control means for controlling a quantity of the working oil that the working oil supplying means supplies; and

supplying oil quantity signal outputting means for receiving the operation position signal output from the operation-position signal outputting means, generating a supplying oil quantity signal from the [input] operation position signal, and outputting the supplying oil quantity signal to the supplying oil quantity control means, thereby controlling the quantity of the working oil supplied to the supplying oil quantity control means by the working oil supplying means.

4. (Amended) A hydraulic drive apparatus for driving and rotating a drive rotary member in accordance with an operation position input from operation position inputting means, the apparatus comprising:

the drive rotary member driven and rotated by hydraulic pressure;

working oil supplying means for supplying working oil to drive and rotate the drive rotary member;

rotation control means for controlling a quantity of the working oil supplied from the working oil supplying means to the drive rotary member so that the drive rotary member is driven and rotated as desired, the rotation control means including:

operation position inputting means for inputting an operation position;

operation-position signal outputting means for generating and outputting an operation position signal depending on the operation position input by the operation position inputting means;

drive signal outputting means for computing and converting the operation position signal output from the operation-position signal outputting means into a drive signal output therefrom;

an electric motor driven and rotated at a speed and a quantity of rotation depending on the drive signal output from the drive signal outputting means; and

working oil control means for controlling a quantity of the working oil supplied from the working oil supplying means to the drive rotary member so that the drive rotary member is driven and rotated depending on rotation of the electric motor;

drive oil pressure detecting means for detecting a pressure of the working oil for driving and rotating the drive rotary member, and generating and outputting a drive oil pressure signal depending on the pressure thus detected;

supplying oil pressure detect means for detecting a pressure of the working oil supplied from the working oil supplying means to the working oil control means, and generating and outputting a supplying-oil pressure signal depending on the pressure thus detected;

a main relief valve for regulating a pressure of the working oil supplied from the working oil supplying means to the working oil control means to be equal to or lower than a set pressure;

an electromagnetic relief valve for varying the set pressure of the main relief valve by varying a set pressure thereof; and

oil pressure control means for receiving the supplying-oil pressure signal output from the supplying oil detect means and the drive oil pressure signal output from the drive oil pressure detecting means, and outputting a current to the electromagnetic relief valve to vary the set pressure of the electromagnetic relief valve and thus the set pressure of the main relief valve, thereby controlling the pressure of the working oil supplied from the working oil supplying means to be higher, by a predetermined pressure, than the pressure of the working oil for driving and rotating the drive rotary member,